REMARKS

Claims 1-20 are pending in the present application.

Claims 1, 3-9, 11-16, 19 and 20 are rejected.

Claims 2, 10, and 17-18 are objected to.

The disclosure of the present application was objected to because the trademarks Avanel, Witconate, Ralufon, Tetronic, Rodasurf, Ipegal and Pluronic were not capitalized in the specification. However, the trademarks need not be capitalized as long as they clearly indicate that they represent trademarked products. The "®" symbol following the word is sufficient. Please see MPEP §608.01(v) under "Examiner Note".

Further, the specification provides a generic description for each of the trademarked products disclosed in the present application: Avanel (page 19, lines 20-22), Witconate (page 21, line 30), Ralufon (page 24, paragraph following table), Tetronic (page 18, lines 13-14), Rodasurf (page 11, lines 3-5), Ipegal (page 11, lines 3-5), and Pluronic (page 31, paragraph following table).

Applicants respectfully request withdrawal of the objection to the disclosure.

Claims 1, 3-9, 11-16, and 19-20 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by or, in the alternative, under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. 5,800,739 to Sonnenberg et al. Applicants respectfully traverse this rejection.

Sonnenberg et al. do not teach all of the elements of independent claims 1 and 16 of the present application. Sonnenberg et al. do not teach a conductive polymer composition comprising: a polymer and a dopant having the general formula:

$$R\text{-}SO_3\text{-}R'$$

The Office Action at page 4 alleges that the doped polypyrrole of Sonnenberg et al. would meet the limitations of present claims 1, 3, 9 and 16, and para-toluene sulfonic acid would meet the limitations of claims 1, 9, and 16. However, the Office Action is incorrect. The doped polypyrrole disclosed in Sonnenberg et al. is not doped with the dopant recited in the present claims. Further, the present claims do not read on para-toluene sulfonic acid. R' may be hydrogen in the general formula for the dopant of the present claims, however, when R is an aryl

group it is not substituted by a methyl group, but by two or more methyl groups. The formula for para-toluene sulfonic acid has only one methyl group, not two or three. Enclosed is a copy of page 1226 of "The Merck Index" which describes the structure of para-toluene sulfonic acid (see #9229). Para-toluene sulfonic acid, also known as 4-methylbenzenesulfonic acid, has only one methyl group on the aryl structure.

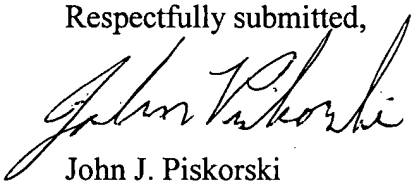
The structural formulas for the stabilizers at column 4, line 67 and column 5, line 12 are directed to sulfates, not sulfonates as the dopant of the presently claimed invention. The "A" component may be $-SO_3$ (col. 5, lines 3 and 8), however, it is always attached to another oxygen to provide $-OSO_3$, which is sulfate, not sulfonate. The variables a + b in the formula at column 4, line 67 must always be at least 3 (col. 4, lines 52-53) thus $-SO_3$ is always bonded to oxygen to form sulfate, not sulfonate as in the present claims. The formula at column 5, line 12 clearly discloses a sulfate (OSO_3), not $-R-SO_3-R'$ as recited in the present claims. The $-SO_3-$ of the present claims is always bonded to a carbon atom. Accordingly, Sonnenberg et al. do not anticipate present claims 1, 3-9, 11-16 and 19-20.

The Office Action also has not established a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, the Patent Office must satisfy three requirements. First, the document relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify the document. Second, the proposed modification of the document must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. In other words, a hindsight analysis is not allowed. Third, the document must teach or suggest all the limitations of the claims. Sonnenberg et al. fails to satisfy all three requirements.

As discussed above Sonnenberg et al. disclose stabilizers that are sulfates, not sulfonates as recited in the present claims. Sonnenberg et al. are totally silent on including any of the sulfonates recited in the present claims in their formulation. Sonnenberg et al. do not provide any incentive for employing the sulfonates of present claims 1 and 16 as dopants. The stabilizers at column 4, line 67 and column 5, line 12 are all sulfates, not sulfonates. Based on the disclosure of Sonnenberg et al. there would not have been a reasonable expectation of success in

respectfully requested to telephone the undersigned at the number set forth below to expedite allowance of this application.

Respectfully submitted,



John J. Piskorski
Attorney for Applicant
Registration No. 35,647
Telephone No.: (508) 229-7662
Facsimile No.: (508) 787-4730

Rohm and Haas Electronic Materials
455 Forest Street
Marlborough, Massachusetts 01752

substituting the sulfates with the presently claimed sulfonates. It is only by hindsight that a person of skill in the art would have been motivated to use the sulfonates recited in present claims 1 and 16 in conductive polymer colloidal compositions.

The Office Action at page 5 alleges that Sonnenberg et al. would have provided sufficient motivation for the person of skill in the art to employ the sulfonates of present claims 1 and 16 in the formulations of Sonnenberg et al. However the Office Action's allegation is both subjective and without authority. The Office Action has not provided objective support for its conclusion that a person of skill in the art would have been motivated to modify Sonneberg et al. to include the sulfonates of present claims 1 and 16. See In re Lee, 61 U.S.P.Q.2d 1430.

Applicants respectfully request withdrawal of the rejection of claims 1, 3-9, 11-16 and 19-20 under 35 U.S.C. §102(b) or, in the alternative, under 35 U.S.C. §103(a) as unpatentable over U.S. 5,800,739 to Sonnenberg et al.

Claims 2, 10, and 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants respectfully traverse this objection.

Claims 2, 10 and 17-18 are dependent on claims which are allowable over the applied documents for the reasons discussed above. Accordingly the claims need not be rewritten and are allowable as presently presented.

Applicants respectfully request withdrawal of the objection to claims 2, 10, and 17-18.

In view of the foregoing remarks, the present application is in condition for allowance. Favorable consideration and allowance of claims 1-20 are earnestly solicited.

Should the Examiner have any questions concerning this response or this application, or should he believe this application is for any reason not yet in condition for allowance, he is

THE MERCK INDEX

AN ENCYCLOPEDIA OF
CHEMICALS AND DRUGS

NINTH EDITION

Martha Windholz, *Editor*
Susan Budavari, *Associate Editor*
Lorraine Y. Stroumtsos, *Assistant Editor*
Margaret Noether Fertig, *Assistant Editor*

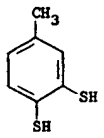
Published by
MERCK & CO., INC.
RAHWAY, N.J., U.S.A.

1976

carbon dioxide. Flash pt 132° (270°F). Miscible with alcohol (decompn), diglycol monomethyl ether, ether, acetone, carbon tetrachloride, benzene, chlorobenzene, kerosene, olive oil. Concd alkaline compds such as NaOH or *tert*-amines may cause run-away polymerization.

USE: In the manuf of polyurethane foams and other elastomers. *Caution:* Causes skin irritation, allergic eczema, also bronchial asthma.

9227. Toluene-3,4-dithiol. 1,2-Dimercapto-4-methylbenzene; "dithiol". $C_7H_8S_2$; mol wt 156.27. C 53.80%, H 5.16%, S 41.04%. Prepd from toluene-3,4-disulfonyl chloride with tin and hydrochloric acid: Mills, Clark, *J. Chem. Soc.* **1936**, 178.



Crystals, mp 31°. bp_{84} 185-187°. Sol in benzene, in aq alkali hydroxide solns.

USE: For the detection of bismuth, molybdenum, rhenium, tin, tungsten, *see* Bickford *et al., J. Am. Pharm. Assoc., Sci. Ed.* **37**, 255 (1948).

9228. *p*-Toluenesulfinic Acid. $C_7H_8O_2S$; mol wt 156.20. C 53.82%, H 5.16%, O 20.49%, S 20.53%. $CH_3C_6H_4SO_2H$. Prepd by reduction of *p*-toluenesulfonyl chloride with zinc dust: Whitmore, Hamilton, *Org. Syn.* **2**, 89 (1922). Because the sulfinic acid is difficult to dry without partial conversion to the sulfonic acid, the sodium salt, $CH_3C_6H_4SO_2Na.2H_2O$, is usually prepd. The free sulfinic acid is then obtained as needed by dissolving the sodium salt in cold water and carefully acidifying the soln with the exact amt of HCl needed.

Long, rhombic plates or needles from water. mp 85°. Freely sol in alc, ether; sparingly sol in water, hot benzene.

9229. *p*-Toluenesulfonic Acid. *4-Methylbenzenesulfonic acid;* tosic acid. $C_7H_8O_3S$; mol wt 172.20. C 48.82%, H 4.68%, O 27.87%, S 18.62%. $CH_3C_6H_4SO_3H$. Prepd by sulfonation of toluene with 96-100% H_2SO_4; when carried out at 75° the compn of the reaction product is 75% *para*-, 19% *ortho*- and 6% *meta*-toluenesulfonic acid. Convenient lab prepn: L. F. Fieser, *Experiments in Organic Chemistry*, (Boston, 3rd ed., 1955) p 144. The separation of toluene from petroleum fractions can be accomplished by sulfonation with H_2SO_4 at 60°.

Monoclinic leaflets or prisms. Also reported as crystallizing with $1H_2O$ or $4H_2O$. When anhydrous, mp 106-107°. Metastable form, mp 38°. bp_{20} 140°. $bp_{0.1}$ 185-187°. Freely sol in water, about 67 g/100 ml. Sol in alc and ether.

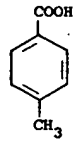
Sodium salt, $C_7H_7NaO_3S$, orthorhombic plates, very sol in water.

USE: In dye chemistry; in manuf of oral antidiabetic drugs. *Caution:* Highly irritating to skin, mucous membranes.

9230. *p*-Toluenesulfonyl Chloride. Tosyl chloride. $C_7H_7ClO_2S$; mol wt 190.65. C 44.10%, H 3.70%, Cl 18.60%, O 16.78%, S 16.82%. $CH_3C_6H_4SO_2Cl$. Made by treating toluene with chlorosulfonic acid.

Crystals, mp 69-71°. bp_{15} 146°. Insol in water; freely sol in alcohol, benzene, ether.

9231. Toluic Acid. *Methylbenzoic acid.* $C_8H_8O_2$; mol wt 136.14. C 70.57%, H 5.92%, O 23.50%. Prepn of *m*- and *o*-forms by oxidation of corresponding xylene: Toland, U.S. pat. **2,903,480** (1959 to California Res. Corp.); Hay *et al., J. Org. Chem.* **25**, 616 (1960). Prepn of *p*-form by reaction of *p*-tolyldiazonium tetrafluoroborate with nickel carbonyl and acetic acid: Clark, Cookson, *J. Chem. Soc.* **1962**, 686; by oxidation of *p*-xylene: Taves, U.S. pat. **3,030,413** (1962 to Hercules Powder). Manuf of *p*-form from toluene: Braunworth, U.S. pat. **3,046,305** (1962 to Pure Oil).



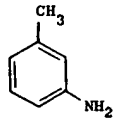
p-form

m-Form, prisms from water, mp 111-113°, bp 263°. Sublimes. Soluble in 1170 parts water at 15°, 60 parts boiling water; very sol in alcohol, ether.

o-Form, crystals, mp 107-108°; bp 258-260°; volatile with steam. Slightly sol in cold water; sol in 35 parts boiling water; very sol in alcohol.

p-Form, crystals, mp 180-181°; bp 274-275°. Sparingly sol in hot water; very sol in alcohol, ether, methanol.

9232. *m*-Toluidine. *3-Methylbenzenamine;* 3-aminotoluene. C_7H_9N; mol wt 107.15. C 78.46%, H 8.47%, N 13.07%. Prepd by amination of toluene with methylhydroxylamine or hydroxylammonium salts in the presence of aluminum trichloride: Kovacic, Foote, *J. Am. Chem. Soc.* **83**, 743 (1961); Kovacic *et al., ibid.* **84**, 759 (1962).



Liquid. d_{25}^{25} 0.990. Solidif about −50°; bp 203-204°; n_D^{22} 1.5711. Slightly sol in water; sol in alcohol, ether, dil acids.

USE: Manuf dyes and other organic chemicals. *Caution:* For toxic symptoms *see* Aniline.

9233. *o*-Toluidine. 2-Aminotoluene; *o*-methylaniline. Prepn: *see m*-toluidine.

Light yellow liq becoming reddish-brown on exposure to air and light. d_{20}^{20} 1.008. bp 200-202°. Flash pt 87°. n_D^{20} 1.5688. Slightly sol in water; sol in alcohol, ether, dil acids. *Keep well closed and protected from light.*

USE: Manufacture of various dyes; printing textiles blue-black; making various colors fast to acids. *Caution: See m*-Toluidine.

9234. *p*-Toluidine. 4-Aminotoluene. Prepn: *see m*-toluidine.

Lustrous plates or leaflets; d_4^{20} 1.046; mp 44-45°; bp 200-201°; n_D^{50} 1.5532. Sol in about 135 parts water, freely in alc, ether, acetone, methanol, carbon disulfide, oils, dil acids.

Bisulfate, $C_7H_9N.H_2SO_4$, white to yellowish crystals. Soluble in water, alcohol.

Hydrochloride, $C_7H_9N.HCl$, grayish-white crystals, mp 243°. Soluble in water, alcohol.

USE: Manufacture of dyes and other organic chemicals; as a reagent for lignin, nitrite, phloroglucinol. *Caution: See m*-Toluidine.

9235. *o*-Tolunitrile. *2-Methylbenzenecarbonitrile; o*-cyanotoluene; *o*-methylbenzonitrile. C_8H_7N; mol wt 117.14. C 82.02%, H 6.02%, N 11.96%. $CH_3C_6H_4CN$. Prepd from *o*-toluidine by diazotization in HCl soln and treatment of the diazonium chloride with potassium cuprocyanide: Herb, *Ann.* **258**, 9 (1890); Clarke, Read, *Org. Syn.* **coll. vol. I** (2nd ed., 1941) p 514.

Liquid; d_4^{20} 0.9955; d_4^{45} 0.9737; d_4^{75} 0.9481; mp −13°; bp_{760} 205.2°; bp_{100} 135°; bp_{40} 110°; bp_{20} 93°; bp_{10} 77.9°; bp_5 64°; $bp_{1.0}$ 36.7°; n_D^{23} 1.52720. Absorption spectrum: Baly, Ewbank, *J. Chem. Soc.* **87**, 1357 (1905); Purvis, *ibid.* **107**, 503 (1915). Insol in water; miscible with alc, ether.

9236. *p*-Tolunitrile. Prepd from *p*-toluidine in the manner described for *o*-tolunitrile.

Needles from alc. d_4^{30} 0.9785; d_4^{45} 0.9640; d_4^{60} 0.9512; d_4^{75} 0.9390; mp 29.5°; bp_{760} 217.6°; bp_{100} 145.2°; bp_{60} 130°; bp_{40} 109.5°; bp_{20} 101.7°; bp_{10} 85.8°; bp_5 71.3°; $bp_{1.0}$ 42.5°. Absorption spectrum: Baly, Ewbank, *J. Chem. Soc.* **87**, 1357